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UNPROTECTED CAROTID ARTERY STENTING IN MODERN PRACTICE: INSIGHTS FROM THE NCDRR

i2 Poster Contributions
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Background: Progress in stroke prevention is a key element to improving the safety of carotid artery stenting (CAS). Embolic protection devices (EPD) may provide a mechanism to reduce peri-procedural strokes. EPD are advocated by consensus guidelines and mandated for Medicare reimbursement. However, outcomes data remain mixed and large, randomized trials have not been performed.

Methods: We analyzed patients enrolled in the CARE RegistryR of CAS between May, 2005 and March, 2011. Patients were grouped into those who received distal filter embolic protection (F-EPD) and those in whom no embolic protection was used (No-EPD). We assessed the relationship between F-EPD use and the composite of in-hospital death, stroke, or myocardial infarction in unadjusted and 1:4 propensity-matched analyses. Patients with acute evolving stroke were excluded from the propensity-matched analysis.

Results: Embolic protection was not used in a total of 448 out of 10,123 cases performed (4.4%). Patients in the No-EPD group had worse pre-procedure neurologic risk factors including higher rates of acute evolving stroke, prior TIA/stroke, symptomatic lesion status, spontaneous carotid artery dissection, difficult lesions to access surgically, and use of general anesthesia intra-procedurally (all $p<0.001$). In unadjusted analyses, the No-EPD ($n = 448$) group had a significantly higher rate of the primary outcome than the F-EPD ($n = 9675$) group (10.0% vs 4.3%, $p <0.001$). However, after propensity matching, rates of the primary outcome did not differ between the No-EPD ($n = 367$) and F-EPD ($n = 1479$) groups (5.5% vs. 5.7%, $p = 0.85$).

Conclusions: Patients selected to undergo unprotected CAS in contemporary practice represent a particularly high-risk group. In such patients, the efficacy of F-EPD in reducing peri-procedural adverse events was not demonstrated. Further studies of neuroprotective strategies in high neurologic-risk patients undergoing carotid revascularization are warranted.